

Section 3 - MAINTENANCE

3.1 INTRODUCTION

To retain the quality of the mower, use genuine SNAPPER replacement parts only. Contact a local SNAPPER dealer for parts and service assistance. For the correct part or information for a particular mower, always mention model and serial number.

3.2 SERVICE - AFTER FIRST 5 HOURS

3.2.1. CHANGE ENGINE OIL

WARNING
Before attempting any adjustments or repairs, STOP the engine, remove the spark plug wire from the spark plug and secure wire away from plug. Engine oil is extremely hot and can cause severe burns. Allow engine oil to cool before draining to prevent injury.

1. Refer to Engine Manual for proper oil specifications and procedures..
2. For simplest/cleanest oil change, loosen lower handle wing nuts and stand mower up on lower handle as shown in Figure 3.1. Drain oil through dipstick tube into a container.

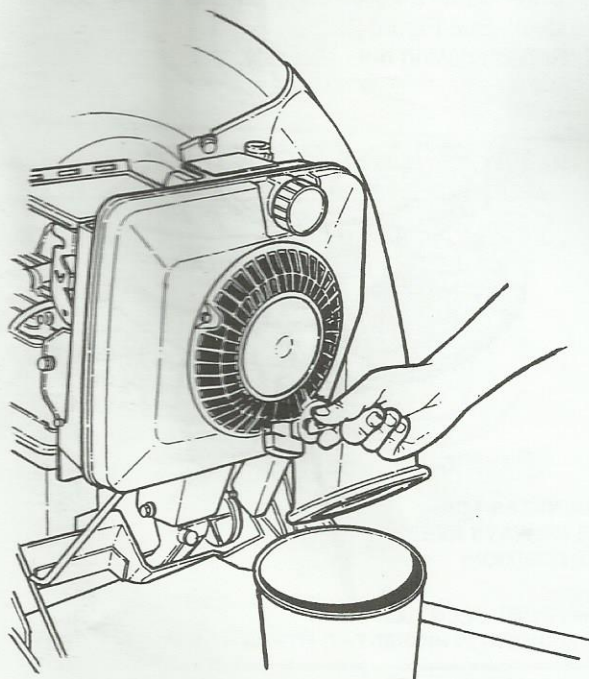


FIGURE 3.1

3.2.2. CHECK GREASE LEVEL IN TRANSMISSION

1. Remove transmission fill plug. Roll machine forward or backward while looking down into plug hole.
2. If liquid grease IS NOT visible on the input gear (the small gear below the plug hole), add an amount, to cover gear, of Snapper "00" grease. See Figure 3.2.

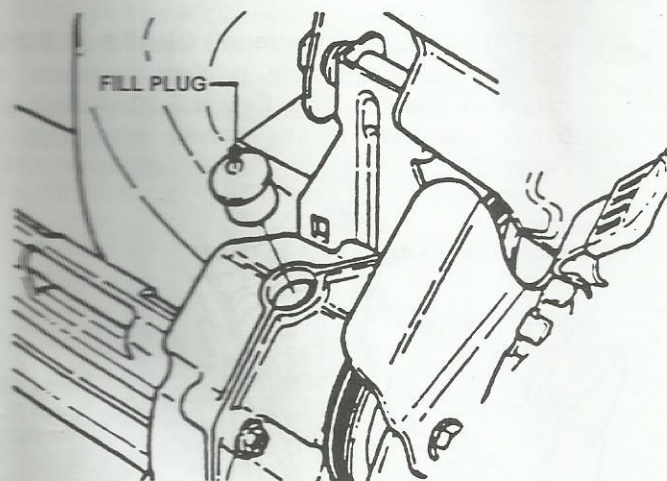


FIGURE 3.2

NOTE: Snapper "00" Grease (Part No. 2-9443) is available at your SNAPPER dealer.

(Continued on Next Page)

Section 3 - MAINTENANCE

3.2.2. CHECK GREASE LEVEL IN TRANSMISSION

NOTE: Do not spill grease or oil on surface of drive disc. See Figure 3.3.

3. Reinstall transmission plug.
4. Thereafter, check grease level after each 25 hours of operation.

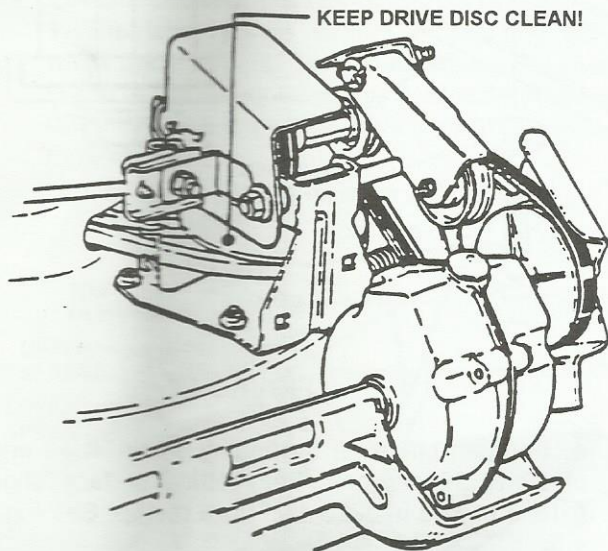


FIGURE 3.3

WARNING

Before attempting any adjustments or repairs, STOP the engine, remove the spark plug wire from the spark plug and secure wire away from plug. Wear heavy leather gloves when handling or working around cutting blades. Blades are extremely sharp and can cause severe injury.

3.2.3 CHECK MOWER BLADE

1. Disconnect spark plug wire and secure end away from plug.
2. Tilt mower up on its rear wheels for access to the blade cap screw. Do not tilt mower with spark plug or carburetor down. See Figure 3.4.
3. Check torque of blade retaining cap screw. Recommended torque should be 30 to 40 ft. lbs. See Figure 3.4.
4. Check blade for sharpness, wear and damage. See Section on Blade Wear Limits.

3.2.4 CHECK ENGINE DRIVE BELT

1. Visually check engine drive belt for cracking, fraying, severed or belt strands exposed. Replace belt before operating mower.

3.2.5 CHECK TRANSMISSION POLY-V BELT

1. Visually check poly-v belt for cracking, fraying, severed or belt strands exposed. Replace belt before operating mower.

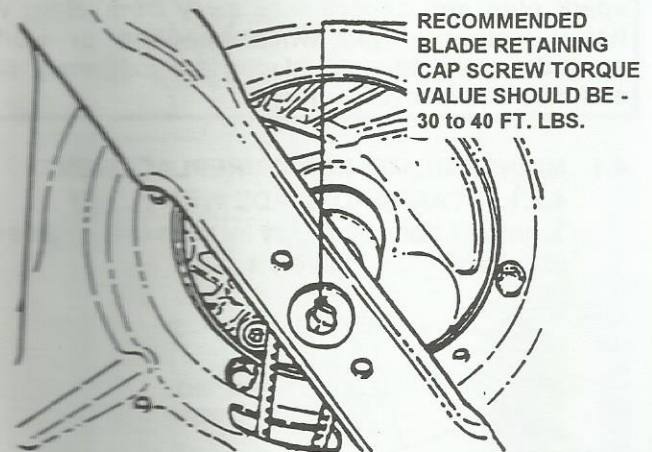


FIGURE 3.4

3.3 ANNUALLY (END OF EACH SEASON)

Perform all maintenance as described in the maintenance schedule.

3.3.1. Engine

Service engine according to engine owner's manual.

3.3.2. Air Filter

Refer to engine owner's manual for service instructions.

3.3.3. Engine Oil

Refer to engine owner's manual for service instructions.

3.4 STORAGE PROCEDURE

Refer to the Engine Owner's Manual for directions regarding engine storage preparations. Prepare the mower for "end of season" storage as follows:

1. Drain fuel from fuel tank and let engine run until all fuel is out of the carburetor.
2. Disconnect and remove the spark plug wire away from spark plug before any other preparations are made!
3. Tape all openings closed to prevent spraying water into exhaust or air intakes during washing.
4. Tilt mower up on its rear wheels and thoroughly clean the underside of the deck. Do not tilt mower with spark plug or carburetor down. Scrape away any accumulation of grass with a putty knife and or wire brush.
5. Lubricate all exposed metal with a light coating of oil to prevent corrosion.
6. On self-propelled models, loosen wing nuts on ground speed control rod before folding handles.
7. Loosen handle knobs. Carefully fold the handles forward, "flexing" the control cables to prevent cable damage.
8. Store the mower in a shed or other dry area, protected from weather.

Section 4 - REPAIR & ADJUSTMENTS



WARNING



Before attempting any adjustments or repairs, **STOP** the engine, remove the spark plug wire from the spark plug and secure wire away from plug. Wear heavy leather gloves when handling or working around cutting blades. Blades are extremely sharp and can cause severe injury.

4.1 MOWER BLADE REPAIR/REPLACEMENT

4.1.1. STANDARD BLADE WEAR LIMIT

1. Inspect blade frequently for signs of excessive wear or damage. See Figure 4.1.

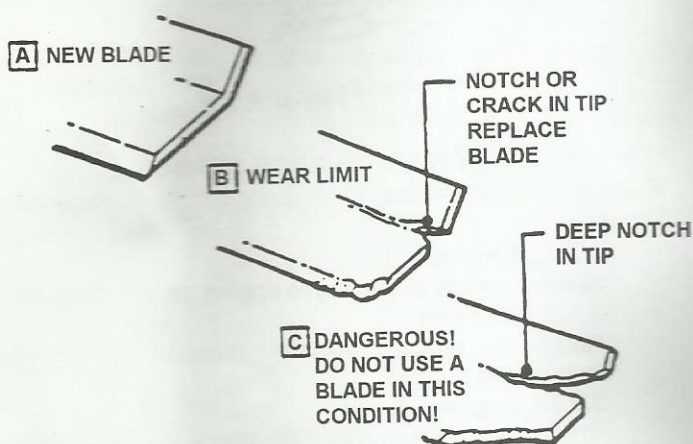


FIGURE 4.1

2. Replace the blade if it is badly chipped, bent, noticeably out of balance or has cracks or notch in either tip. See Figure 4.1. Replace with new blade.



WARNING



Never use a cutting blade that shows signs of excessive wear or damage. Refer to Section on MOWER BLADE REPAIR/REPLACEMENT for proper blade inspection and service procedures.

4.1.2. BLADE SHARPENING

1. Disconnect spark plug wire and secure end away from plug.
2. Tilt mower up on its rear wheels. Do not tilt mower with spark plug or carburetor down.
3. Remove blade. See Figure 4.2.

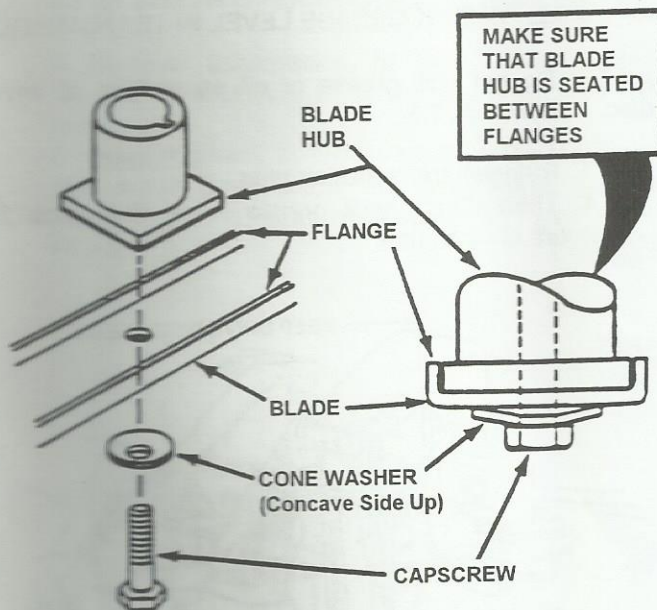


FIGURE 4.2

4. Sharpen blade on a grinding wheel at an angle of 22 to 28 degrees. The cutting surface should extend inward about 3-1/2" from the tip. See Figure 4.3.

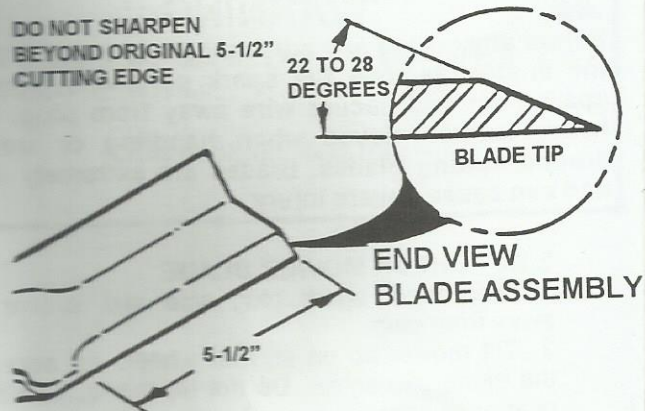


FIGURE 4.3

5. Check blade for balance. If necessary, correct balance by grinding heavy end of blade.
6. Reinstall blade. Refer to Figure 4.1. Check torque of blade retaining cap screw. Recommended torque should be 30 to 40 ft. lbs.

Section 4 - REPAIR & ADJUSTMENTS



WARNING



Before attempting any adjustments or repairs, **STOP** the engine, remove the spark plug wire from the spark plug and secure wire away from plug.

NOTE: The following sections 4.2 through 4.4 are for self-propelled models.

4.2 WHEEL DRIVE CONTROL ADJUSTMENT

1. The wheel drive control is properly adjusted when there is 1/16" to 1/8" clearance between the inside of the spring hook and the inside of the clutch cable eye with the wheel drive control released. See Figure 4.4.

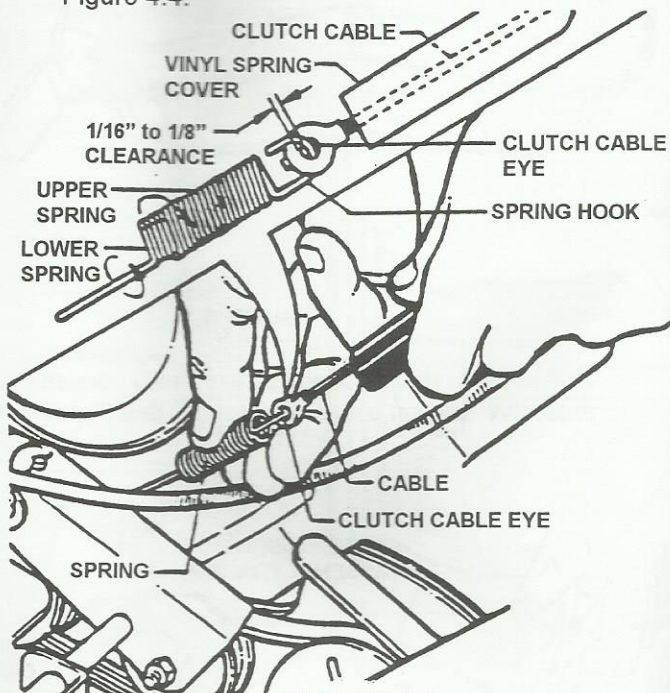


FIGURE 4.4

2. To adjust, unhook upper spring from cable eye and rotate spring in direction required to extend or shorten spring length.
3. Rehook upper spring to cable eye and check clearance. Repeat procedure if required.

NOTE: The vinyl spring cover should be kept over the spring at all times except for adjustments.

4. If the wheel drive control fails to return quickly to the "OFF" position when released, check for binding at the cable holdings located on the side of the right handle. The upper clip should be located 2" below the upper knob; the lower clip should be 4" above the lower knob. The cable should slide freely with the clips installed at these locations. See Figure 4.5.

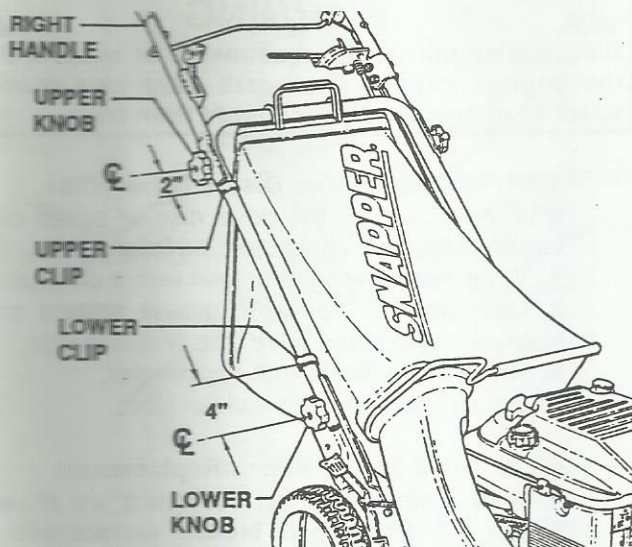


FIGURE 4.5

4.3 DRIVEN DISC SERVICE

If the mower does not propel itself properly, refer to Figure 4.6. Check for the following problems:

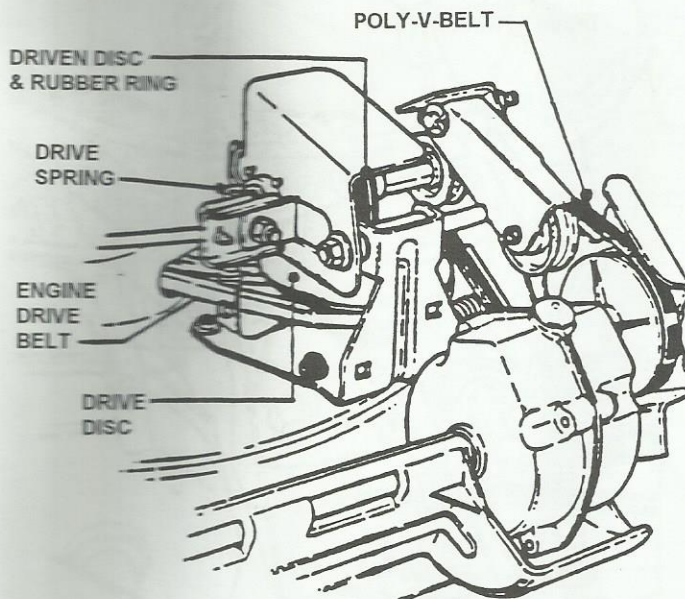


FIGURE 4.6

1. Grease on drive disc causing slippage.
2. Broken or disconnected drive spring.
3. Driven disc is out of adjustment.
4. Driven disc rubber ring is worn - does not contact drive disc properly.
5. Worn Poly-V Belt or engine drive belt.

NOTE: If any of the above (1 thru 5) are causing problems, service as follows:

Section 4 - REPAIR & ADJUSTMENTS



WARNING



Before attempting any adjustments or repairs, **STOP** the engine, remove the spark plug wire from the spark plug and secure wire away from plug.

4.3.1. Cleaning Drive Disc & Driven Disc.

If oil or grease on the drive disc or driven disc is causing slippage, clean discs as follows:

1. Wipe away any oil or grease with a clean cloth.
2. Use either an approved grease solvent or hot, soapy water to clean drive disc or driven disc.
3. Rinse components with clean water.
4. Dry components with a clean cloth.

4.3.2. Drive Spring Repair/Replacement

If drive spring is loose, reconnect as shown in Figure 4.7. If spring is broken, replace with new spring.

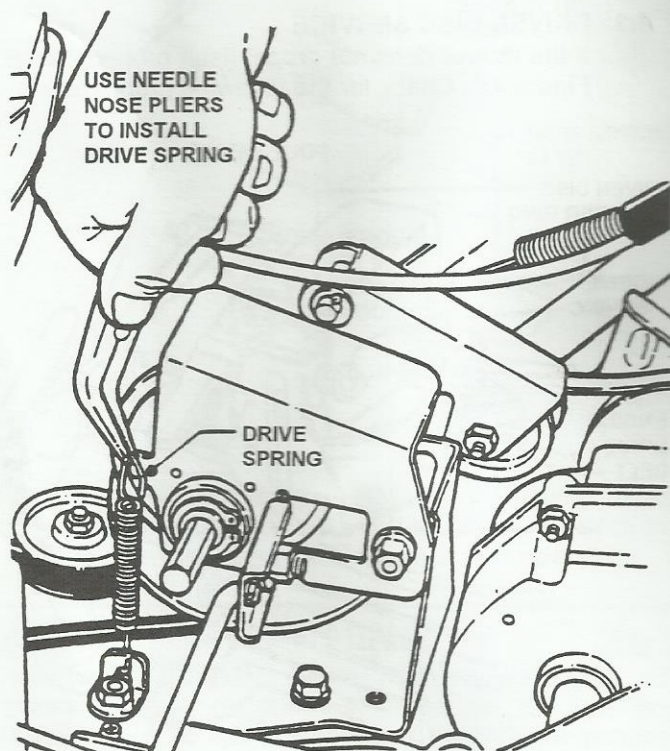


FIGURE 4.7

4.3.3. DRIVEN DISC ADJUSTMENT

If the drive disc and driven disc are clean and the mower drive is still slipping, adjust the driven disc as follows:

1. Place shift rod in the sixth speed position. See Figure 4.8.

RECYCLING MODEL SHOWN
(ROPE START MOUNTED ON
RIGHT SIDE OF HANDLE)

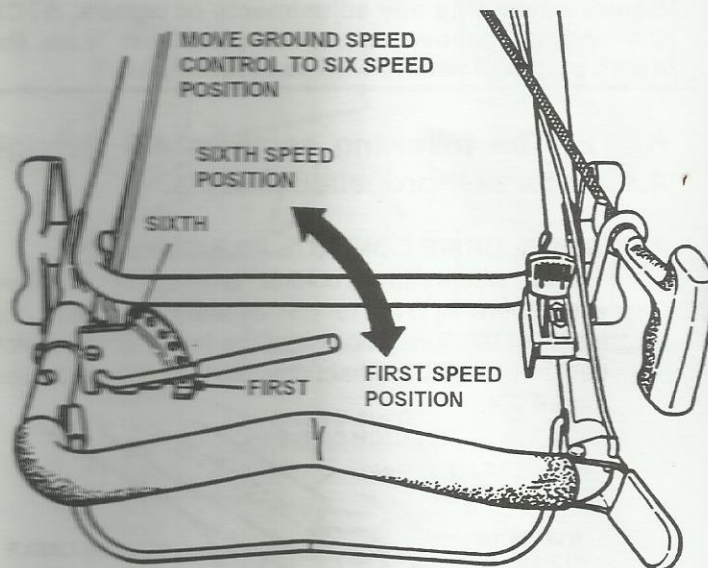


FIGURE 4.8

2. Remove driven disc spring from driven disc assembly. Loosen connector hex nut. See Figure 4.9.

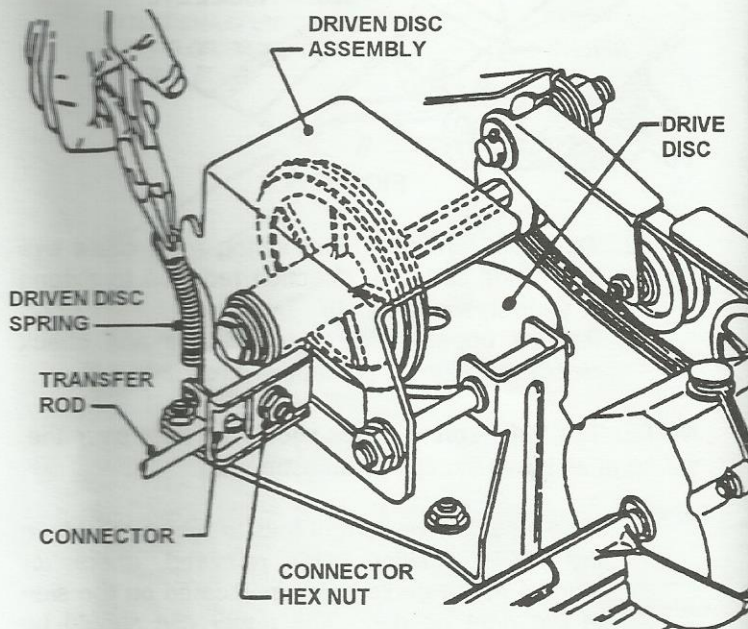


FIGURE 4.9

Section 4 - REPAIR & ADJUSTMENTS



WARNING



Before attempting any adjustments or repairs, **STOP** the engine, remove the spark plug wire from the spark plug and secure wire away from plug.

3. Slide driven disc assembly over to 1/8" from outside edge of drive disc. Maintaining the 1/8" measurement, remove any looseness from the linkage. This can be done by holding the transfer rod and applying pressure to the left (as viewed from operators position). Then retighten the connector hex nut securely. See Figure 4.10. Move ground speed control to the first speed position, then back to the sixth speed position. Recheck the 1/8" measurement described previously. Reinstall driven disc spring to driven disc assembly.

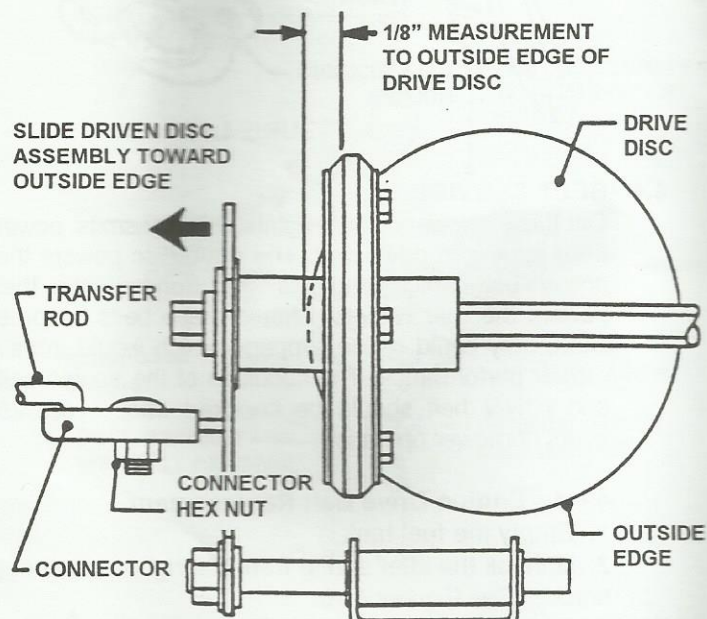


FIGURE 4.10

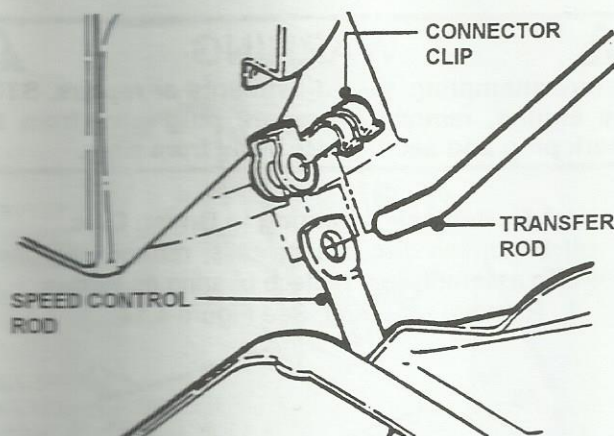


FIGURE 4.11

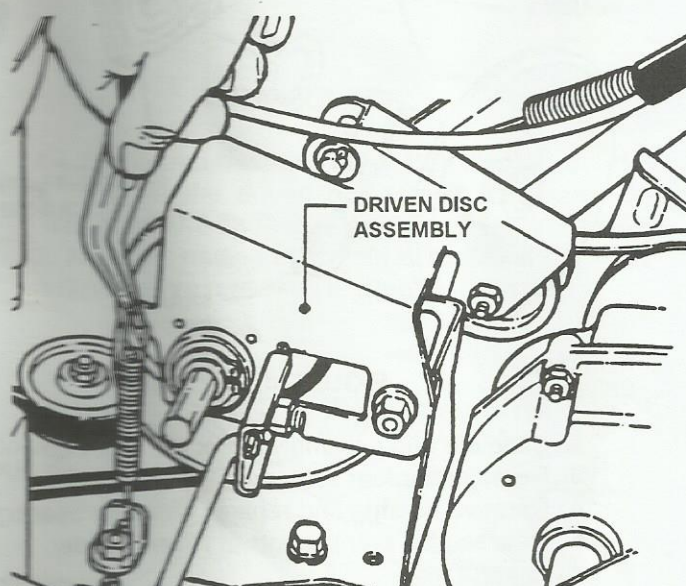


FIGURE 4.12

4.3.4. Replacing Driven Disc Rubber Ring

If the rubber ring is badly chunked or worn down to within 1/16" of the metal rim of the driven disc hub, it must be replaced. Install new rubber ring as follows:

1. Using a small flat blade screwdriver, free the clip from the transfer rod. Then remove the transfer rod from the clip and the speed control rod. See Figure 4.11.
2. Using needle nose pliers, unhook the drive spring and slide the driven disc assembly off the hex shaft. See Figure 4.12.
3. Remove the five machine screws and plate which secure the rubber ring to the driven disc hub. See Figure 4.13.
4. Install new rubber ring.
5. Reverse above procedures for reassembly and installation.

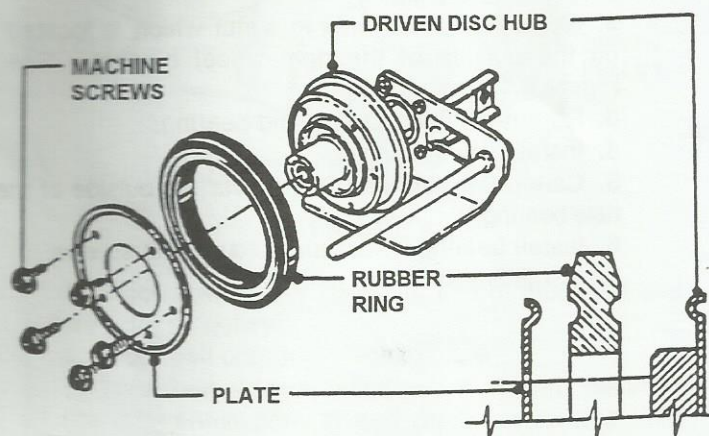


FIGURE 4.13

Section 4 - REPAIR & ADJUSTMENTS



WARNING



Before attempting any adjustments or repairs, **STOP** the engine, remove the spark plug wire from the spark plug and secure wire away from plug.

- 4.3.5. Replacing Bearing In Driven Disc**
If the driven disc bearing fails, remove the driven disc assembly and replace bearing as follows:
1. Remove snap ring. See Figure 4.14.

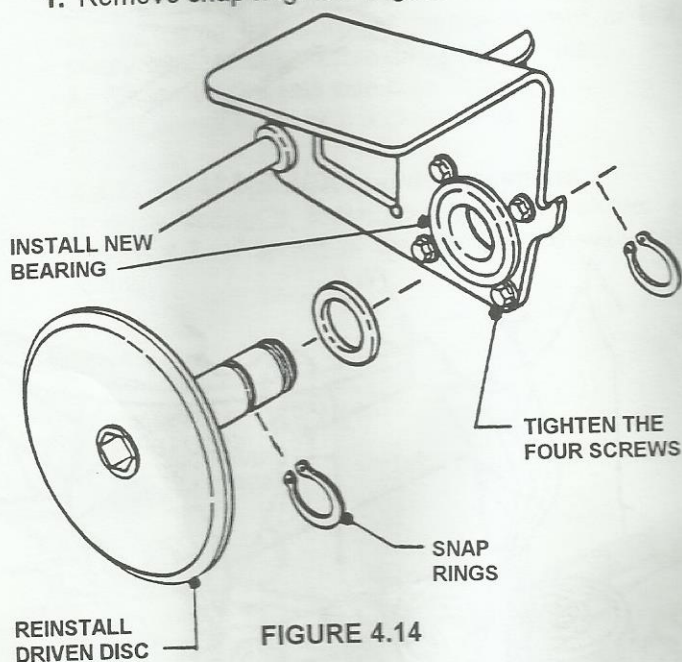


FIGURE 4.14

2. Slide the hub assembly out of the bearing.
3. Remove the four screws.
4. Remove bearing and replace with new bearing.
5. Reassemble components in reverse order.

4.3.6. Replacement Of Bearing On Pulley End Of Hex Shaft

To replace the bearing on the pulley end of the hex shaft, proceed as follows:

1. Hold the hex shaft with an adjustable wrench held next to the pulley.
2. Remove the 3/8" hex lock nut which is located on the outside of the right wheel bracket. See Figure 4.15.
3. Remove holder, O-ring and bearing.
4. Install new bearing.
5. Carefully install new O-ring over the outside of the new bearing.
6. Install bearing holder and secure with screws.
7. Install 3/8" hex lock nut.

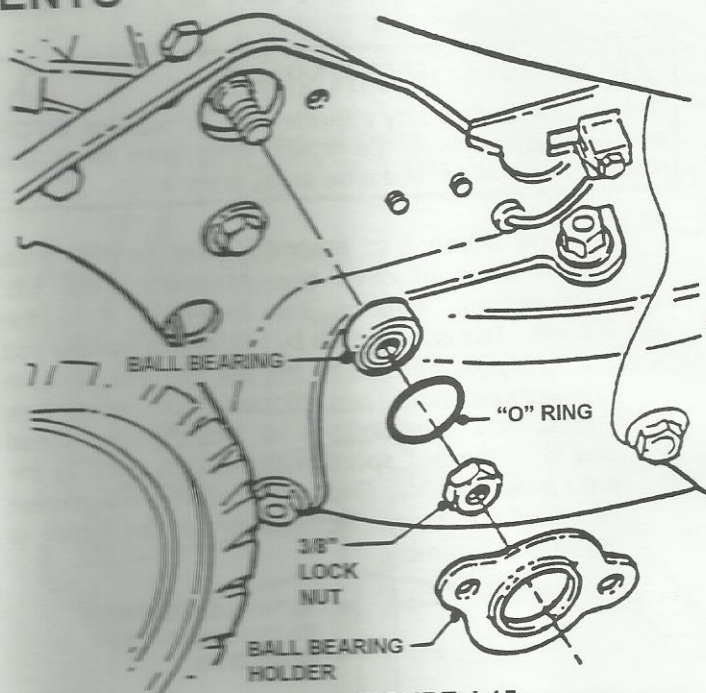


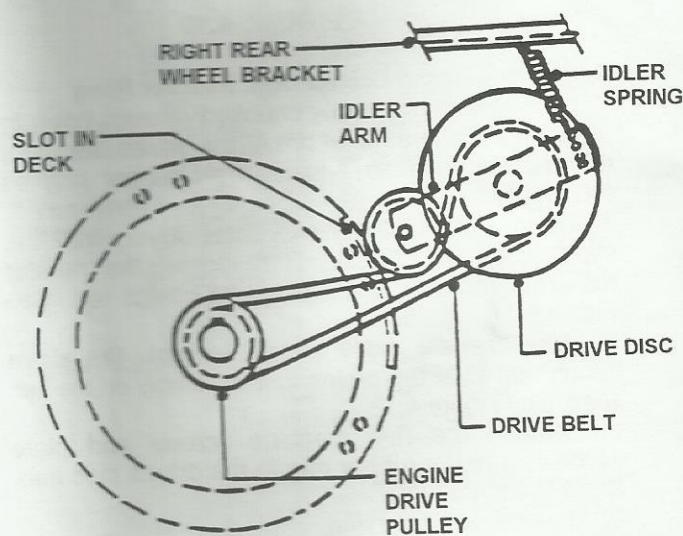
FIGURE 4.15

4.4. BELT SERVICE

On these mowers, the engine belt transmits power from engine to drive disc. The drive disc powers the poly-v belt which engages the transmission that powers the rear wheels. Should these belts become worn, they could cause slippage which would impair mower performance. The condition of the engine belt and poly-v belt should be checked after every 25 hours of mower operation.

4.4.1. Engine Drive Belt Replacement

1. Empty the fuel tank.
2. Unhook the idler spring from the right rear wheel bracket. See Figures 4.16.



TOP VIEW OF ENGINE BELT ROUTING

FIGURE 4.16

Section 4 - REPAIR & ADJUSTMENTS



WARNING



Before attempting any adjustments or repairs, STOP the engine, remove the spark plug wire from the spark plug and secure wire away from plug.

4.4.1. Engine Drive Belt Replacement (Continued from Previous Page)

3. Remove the driven disc. Refer to Section on "Replacing Driven Disc Rubber Ring" for driven disc removal procedure.

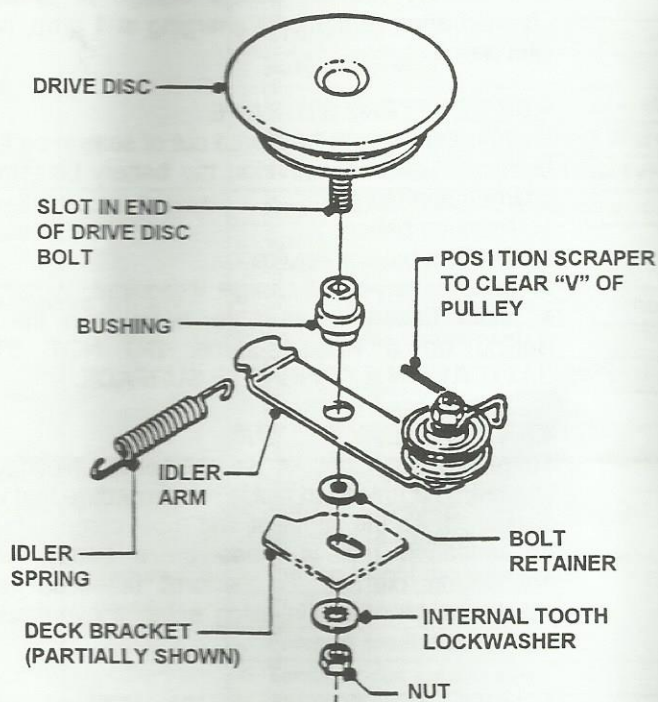


FIGURE 4.17

4. Do not tilt mower with spark plug or carburetor down. Tilt mower up on its rear wheels and remove blade and blade hub. Assistance from another person may be necessary to hold mower in the tilted position.

5. Hold the slotted end of the drive disc bolt with a screwdriver and remove the nut and internal tooth lock washer. See Figure 4.17.

6. Lift the drive disc off the idler arm and remove worn belt.

7. Loop one end of new belt over engine pulley and insert the other end through slot in deck. See Figure 4.17.

8. Loop the belt around the pulley on the bottom of the drive disc.

9. Reinstall drive disc and retaining hardware.

10. Reinstall blade hub and cutter blade. Recommended torque for blade cap screw is 30 to 40 ft. lbs.

11. Use a stiff wire, such as a coat hanger, with a hook fashioned on one end to pull the hooked end of the idler spring through the large hole in the right wheel bracket. See Figure 4.18.

12. Reinstall the driven disc assembly.

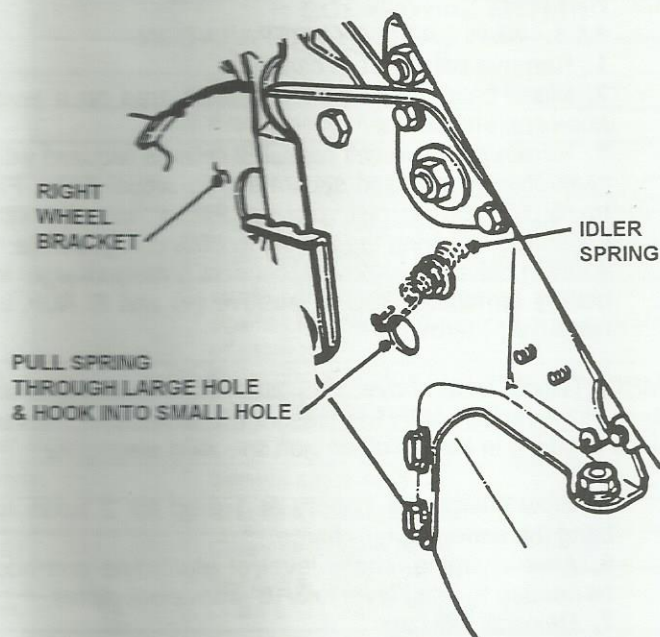
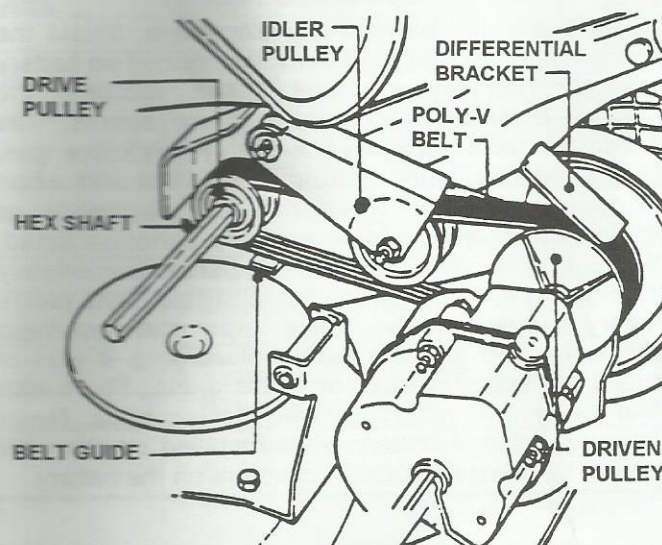


FIGURE 4.18

4.4.2. Transmission Poly-V Belt Replacement

1. Remove the driven disc. Refer to Section on "Replacing Driven Disc Rubber Ring" for procedure.

2. Note the routing of the old belt around the three pulleys before removing it. See Figure 4.19.



ROUTING OF POLY-V BELT

FIGURE 4.19

3. Place new Poly-V Belt over end of hex shaft and onto driven pulley.

4. Work belt onto top of idler pulley.

5. Twist belt sideways and pull it upward between the differential bracket and drive pulley and then down into the pulley groove. Make sure the Poly-V Belt is above belt guide. See Figure 4.19.

Section 4 - REPAIR & ADJUSTMENTS

4.5. BATTERY SERVICE

4.5.1. NEW BATTERY PREPARATION

1. Remove battery from carton.
2. Place battery in a well ventilated area on a level non-concrete surface.
3. Remove battery cell caps. Fill cells as required with electrolyte (purchased separately) to proper level. Fill to 3/16" above cell plates. Filling battery with electrolyte will bring the battery to 80% charged state.
4. With cell caps removed, connect battery charger to battery terminals; RED to positive (+) and BLACK to negative (-) terminal.

IMPORTANT: 3/16" above cell plates is the recommended level. However do not try to measure this dimension. Never place anything in battery other than specified electrolyte.

5. Slow charge the battery at 1 amp for 2 hours to bring the battery to full charge.
6. After charging, check level of electrolyte and add as needed to bring level to 3/16" above cell plates.
7. Reinstall cell caps.
8. Install battery into power unit.
9. Connect positive (+) cable (red) first, from wiring harness to the positive terminal (+) on battery using bolt and nut provided in hardware bag. Connect negative (-) cable (black) last, to negative terminal (-) on battery using bolt and nut. Apply a small amount of grease over terminals to prevent corrosion.



CAUTION



DO NOT over fill battery with electrolyte. Shield the positive terminal with terminal cover located on battery harness. This prevents metal from touching the positive terminal which could cause sparks. The electrolyte (acid) produces a highly explosive gas. Keep all sparks, flame and fire away from area when charging battery or when handling electrolyte or battery. Electrolyte (acid) is a highly corrosive liquid. Wear eye protection. Wash affected areas immediately after having eye or skin contact with electrolyte (acid). Battery acid is corrosive. Rinse empty acid containers with water and mutilate before discarding. If acid is spilled on battery, bench, or clothing, etc., Flush with clear water and neutralize with baking soda. Never attempt to charge battery while installed on the walk behind. Never use "BOOST" chargers on the battery.

4.5.2. BATTERY SERVICE

1. Remove battery.
2. Place battery in a well ventilated area on a level surface.
3. Using distilled water, refill cells as required to cover cell plates of which can also be visualized through the plastic battery case.
4. With cell caps removed, connect battery charger to battery terminals. Red to positive (+) terminal and black to negative (-) terminal.
5. Slow charge battery at 1 amp for 10 hours.
6. If battery will not accept charge or is partially charged after 10 hours of charging at 1 amp, replace with new battery.

4.5.3. BATTERY STORAGE

If Walk Behind is to be stored out of season on its rear bumper, it is recommended the battery be removed, charged and stored.

1. Remove battery.
2. Perform battery service.
3. Bring battery to full charge, if required.
4. Store battery in an area away from the Walk Behind on a wood surface. **DO NOT STORE BATTERY ON A CONCRETE SURFACE.**

4.5.4. BATTERY TESTING

There are two types of battery tests: Unloaded and Loaded. The unloaded test is the procedure that will be discussed. It's the simplest and most commonly used. An unloaded test is made on a battery without discharging current. To perform unloaded testing, check charge condition using either a hydrometer or voltmeter.

1. Using a voltmeter, voltage readings appear instantly to show the state of charge. Remember to hook the positive lead to the battery's positive terminal, and the negative lead to the negative terminal.
2. A hydrometer measures the specific gravity of each cell. The specific gravity tells the degree of charge; generally, a specific gravity of about 1.265 to 1.280 indicates full charge. A reading of 1.230 to 1.260 indicates the battery should be charged. The chart on the next page shows the charge level as measured by syringe float hydrometer, digital voltmeter and five ball hydrometer.

4.5.4. BATTERY TESTING

Methods of Checking Battery Condition			
State of Charge	Syringe Hydrometer	Digital Voltmeter	Five Ball Hydrometer
100% Charged w/ Sulfate Stop	1.280	12.80v	Five Balls Floating
100% Charged	1.265	12.60v	Four Balls Floating
75% Charged	1.210	12.40v	Three Balls Floating
50% Charged	1.160	12.10v	Two Balls Floating
25% Charged	1.120	11.90v	One Ball Floating
0% Charged	Less than 1.100	Less than 11.80v	Zero Balls Floating

TROUBLESHOOTING

PROBLEM	PROBABLE CAUSE	CORRECTIVE ACTION
Engine Will Not Start Using Electric Starter	1. Battery is dead.	1. Charge or replace battery.
	2. Wiring harness to battery disconnected.	2. Connect wiring harness and tighten securely.
	3. Spark plug wire disconnected.	3. Place spark plug wire onto spark plug.
Engine Will Not Start Using Recoil Starter	1. Fuel tank empty.	1. Fill fuel tank with fresh fuel.
	2. Engine needs choking.	2. Move choke control to "CHOKE" position.
	3. Spark plug wire disconnected.	3. Place spark plug wire onto spark plug.
	4. Key switch is not in the "RUN" position.	4. Turn key switch to the "RUN" position.
Engine Stalls or Stops After Running	1. Blade control is released or is not being held securely against handle.	1. Blade control should be held securely against handle at all times during operation of mower.
	2. Choke control in the "CHOKE" position.	2. Move choke control to "OFF" position.
	3. Fuel tank empty.	3. Fill with fuel to proper level.
	4. Engine air pre-cleaner and or air cleaner dirty.	4. Clean free of all debris.
	5. Spark plug defective or gap set improperly.	5. Service spark plug.
	6. Water, debris or stale fuel in fuel system.	6. Drain and clean fuel system.
Engine Loses Power	1. Engine air pre-cleaner or air cleaner dirty	1. Clean or replace filters.
	2. Spark plug faulty.	2. Service spark plug.
	3. Water, debris or stale fuel in fuel system.	3. Drain and clean fuel system.
Excessive Vibration	1. Damaged, out of balance or bent mower blade.	1. Service mower blade.
	2. Loose blade components.	2. Service and tighten loose parts.
	3. Loose or missing air lift (if equipped).	3. Replace air lifts. Tighten to proper torque.
	4. Lumpy or frayed belt.	4. Replace belt.
	5. Bent Idler pulley.	5. Replace pulley.
Mower Will Not Move Loss Of Traction (Self-Propelled Models)	1. Damaged transmission.	1. Contact authorized SNAPPER dealer.
	2. Traction drive belt requires replacement.	2. Replace traction drive belt.
	3. Driven disc slipping.	3. Clean or replace driven disc.
Cutting Grass Improperly	1. Cutting height too low or high.	1. Adjust cutting height.
	2. Engine speed too slow.	2. Move engine speed control to "FAST" position.
	3. Forward ground speed too fast.	3. Move ground speed control to a slower speed.
	4. Terraced cut, side to side.	4. Adjust height of cut with height adjust levers.
	5. Excessive deck pitch, front to rear.	5. Adjust height of cut with height adjust levers.
	6. Cutting blade dull or damaged.	6. Sharpen cutting edges or replace blade.
Poor Grass Discharge	1. Engine speed too slow.	1. Move engine speed control to "FAST" position.
	2. Forward speed too fast.	2. Move ground speed control to a slower speed.
	3. Grass is wet.	3. Mow when grass is dry.
	4. Excessively worn or damaged blade.	4. Service mower blade.
	5. Build up of grass clippings and debris under deck.	5. Clean deck.
	6. Improper blade installed on deck.	6. Install proper SNAPPER blade.
	7. Blade installed improperly on deck.	7. Install blade properly.
Oil Leaking	1. Leaking engine case.	1. Contact authorized SNAPPER dealer. 2. Check and tighten drain plug. 3. Make sure dip stick or oil filler cap is securely in place.

SERVICE SCHEDULE

ITEM	SERVICE PERFORMED	REF.	EACH USE	5 HRS	25 HRS	50 HRS	100 HRS	EACH SEASON
Engine Oil	Check Oil Level	Page 5	X					
	Initial Oil Change	Page 9		X				
	Periodic Oil Change	Page 9			X*			
Air Pre-Cleaner	Clean Sponge Element	Engine Manual			X**			
Air Cleaner	Clean or Replace	Engine Manual			X**			
Spark Plug	Replace	Engine Manual					X	
Engine Cooling System	Clean Shroud & Fins	Engine Manual & Page 9					X**	
Drive Belts	Check For Wear And Tension	Page 10, 15,16			X	X		X
Mower Blades	Check For Wear, Damage & Replacement	Page 10, 11	X					
Mower Deck	Clean Debris Accumulation	Page 10	X					
Transmission Grease	Check Grease Level	Page 9			X			X
	Periodic Grease Check	Pages 9, 10						X
Drive Disc	Check for Wear Damage & Replacement	Pages 12-15				X		
Battery	Check Electrolyte	Pages 5, 17			X			X
	Charge Battery	Page 17						X
	Testing Battery	Page 17						X

* Change oil every 25 hours when operating under heavy load or high temperatures.

**Clean more often under dusty conditions or when air debris is present

4.6. MAINTENANCE/REPLACEMENT PARTS

MAINTENANCE PARTS	
Engine Speed Control	2-9036
Blade Control Cable	2-5036
Swivel Lock Control Cable	4-6669
Clutch Pull Cable	2-5013
Cutter Blade (Mulching)	4-1939
Cutter Blade (Ninja - Quad Edge)	2-6407
Wheel Drive Pulley to Transmission Pulley Belt	1-2354
Engine to Drive Disc Belt	1-2353
Rubber Drive Tire (Commercial Model)	1-0927
Parts Manual for 21" Steel Deck Walk Behind Mower Series 12 & 15	0-6060

SNAPPER

3 YEAR LIMITED WARRANTY

For three (3) years from purchase date for the original purchaser's residential, non-commercial use, SNAPPER, through any SNAPPER dealer will replace, free of charge (except for taxes where applicable), any part or parts found upon examination by the factory at McDonough, Georgia, to be defective in material or workmanship or both.

For ninety (90) days from purchase date for the original purchaser's commercial, rental, or other non-residential use, SNAPPER, through any SNAPPER dealer will replace, free of charge, any part or parts found upon examination by the factory at McDonough, Georgia, to be defective in material or workmanship or both.

All transportation costs incurred by the purchaser in submitting material to a SNAPPER dealer for replacement under this warranty must be paid by the purchaser.

This warranty does not apply to engines and their components, hydro transmissions, gear drive transmissions and batteries, as these items are warranted separately. This warranty does not apply to parts that have been damaged by accident, alteration, abuse, improper lubrication, normal wear, or other cause beyond the control of SNAPPER. This warranty does not cover any machine or component part that has been altered or modified changing safety, performance, or durability.

There is no other express warranty.

DISCLAIMER OF WARRANTY

Implied warranties, including those of merchantability and fitness for a particular purpose, are limited to three (3) years from purchase date for the original purchaser's residential or other non-commercial use, and ninety (90) days from purchase for the original purchaser's commercial, rental or other non-residential use, and to the extent permitted by law, any and all implied warranties are excluded. This is the exclusive remedy. Liabilities for consequential damages, under any and all warranties are excluded.

Some states do not allow limitations on how long an implied warranty lasts, or do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

WARNING: THE USE OF REPLACEMENT PARTS OTHER THAN GENUINE SNAPPER PARTS MAY IMPAIR THE SAFETY OF SNAPPER PRODUCTS AND WILL VOID ANY LIABILITY AND WARRANTY BY SNAPPER ASSOCIATED WITH THE USE OF SUCH PARTS.

IMPORTANT: Please fill out the attached SNAPPER Product Registration Card immediately and mail to:
Snapper's Product Registration Center, P.O. Box 777, McDonough, Georgia 30253

ACCESSORIES

Below is a list of popular accessories for the SNAPPER Walk Behind Mowers. Contact an authorized SNAPPER dealer under Lawnmowers in the yellow pages to obtain any of these accessories.

SNAPPER WALK BEHIND MOWER ACCESSORIES 21" STEEL DECK

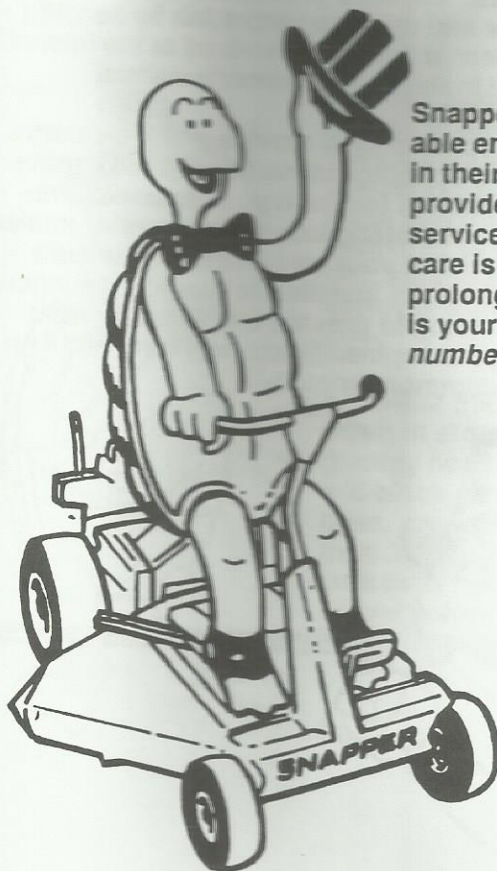
PART NO.	DESCRIPTION	MODELS USED ON
6-0856	Grass Catcher (W / Adapter) (Kwik-N-Ezy)	All 21" Steel Deck Models
6-0936	Grass Catcher (Slider Door)	All 21" Steel Deck Models
6-1003	Grass Catcher Bag Liners (10 to a Pack)	All 21" Steel Deck Models
6-1200	Recycling Kit (Ninja Cover)	All 21" Steel Deck Models
6-1201	Recycling Kit (Ninja Plug)	All 21" Steel Deck Models
6-3041	Snapperizer Kit	All 21" Steel Deck "FR" Models
6-0440	Snapperizer Kit	All 21" Steel Deck Models
6-1256	Thatcherizer Kit	All 21" Steel Deck Models
6-3084	Thatcherizer Kit	All 21" Steel Deck Swivel Wheel Models
4-2965	Side Discharge Chute Kit	All 21" Steel Deck Models
6-0785	Air Lift Kit	All 21" Steel Deck Models
6-1188	Battery Charger Kit	All 21" Steel Deck Models
6-7012	Battery Kit (Wet Cell)	All 21" Steel Deck Models
1-6814	Adapter Plug (Recycling Plug for Grass Bag Models)	All 21" Steel Deck Models

PRIMARY MAINTENANCE

SNAPPER®

VS. DIRT!

an
illustration of
how dirt can
damage your
engine & how
reasonable
maintenance
can protect it!

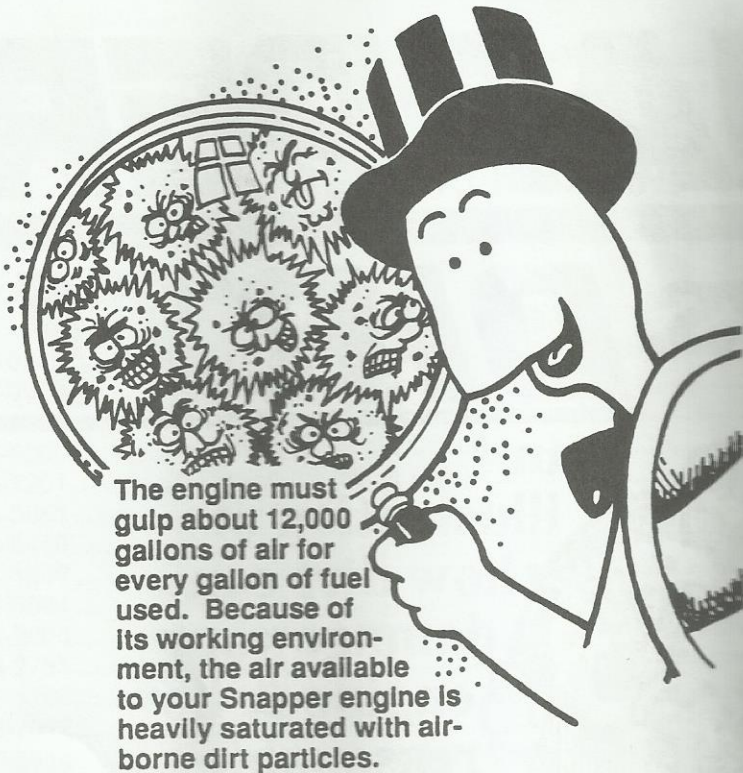


Snapper uses the best available engines and components in their products in order to provide long, satisfactory service. However, proper care is essential in prolonging engine life. Dirt is your engine's *enemy number 1*!

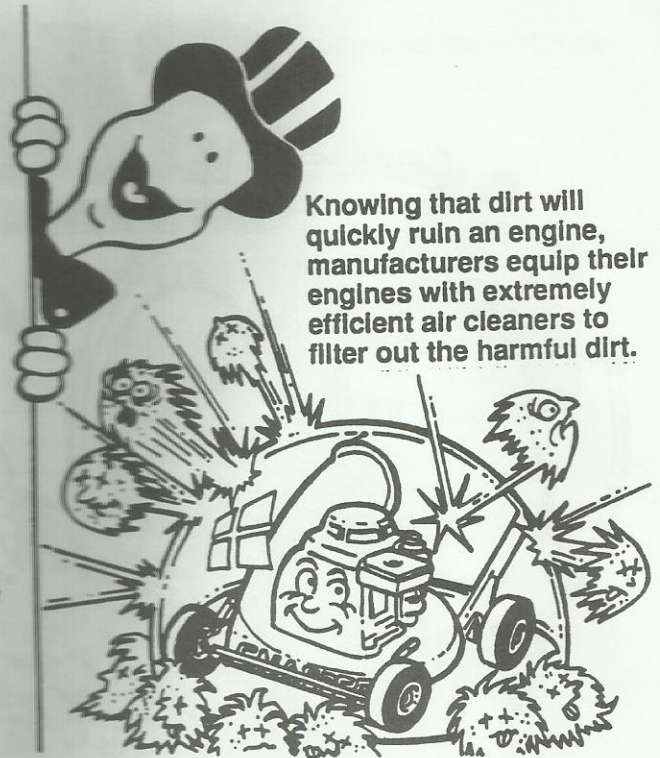


The engine on your Snapper product spends its entire life operating close to the ground at high speed creating a virtual storm of dust and dirt!

PRIMARY MAINTENANCE



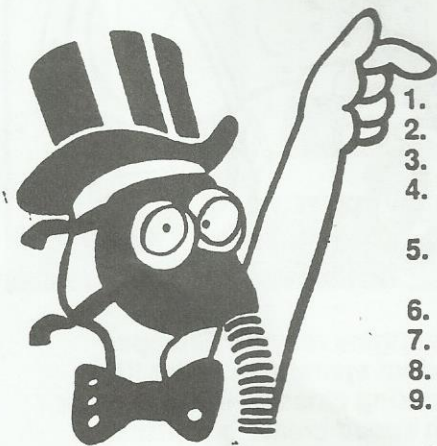
The engine must gulp about 12,000 gallons of air for every gallon of fuel used. Because of its working environment, the air available to your Snapper engine is heavily saturated with airborne dirt particles.



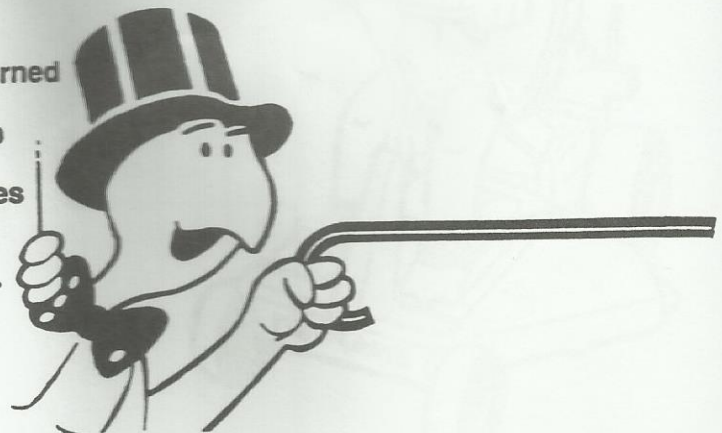
Knowing that dirt will quickly ruin an engine, manufacturers equip their engines with extremely efficient air cleaners to filter out the harmful dirt.

As the dirt particles are stopped, they build up and begin to clog the outside of the filter. This reduces the amount of air available to the engine and causes an over-rich fuel mixture which results in the following adverse effects:

An improperly serviced, dirt clogged air cleaner will:



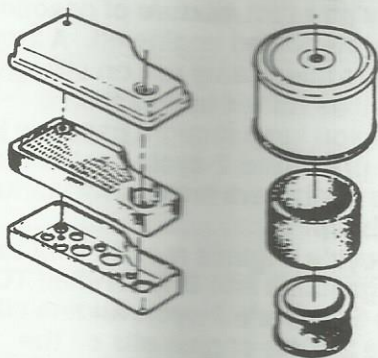
1. Increase fuel consumption
2. cause power loss
3. result in hard starting
4. create smoke from unburned fuel
5. produce carbon build-up internally
6. foul spark plug electrodes
7. score cylinder walls
8. burn valves
9. wear out the engine prematurely
10. COST YOU MONEY!



Damage caused by a poorly serviced air cleaner is not covered under the engine warranties. So, save yourself unnecessary expenses and undue aggravation by keeping the air cleaner properly serviced at the intervals specified in the engine owner's manual.

It doesn't take long to service an air cleaner. Follow the specific instructions in the engine owner's manual for the type filter used. Prevent dirt from falling into the carburetor intake when servicing your air cleaner. Make sure components are installed in correct sequence after servicing to prevent unfiltered air from entering the engine. Some servicing hints on several common types are:

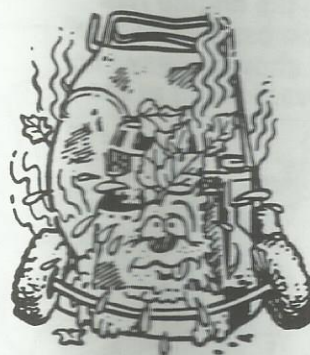
PRIMARY MAINTENANCE



Generally, wash foam-type filters in a dishwashing detergent and water solution. Rinse and wring dry, then saturate with oil and squeeze out excess. *Failure to re-oil this type filter will ruin the engine.*

Clean paper elements by tapping lightly. Blowing with air will rupture paper elements.

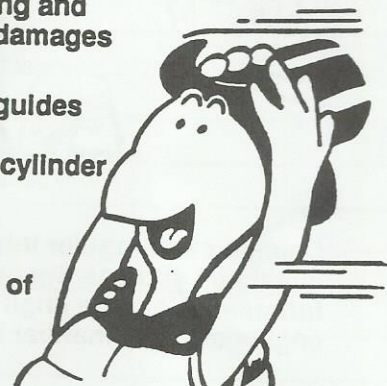
Use a flashlight to detect clogged or torn paper elements - replace if damaged in any way.



Air is also needed to keep your engine cool. Dirt, dust & debris build up to restrict and clog cooling air intake screens and fins. Clean screens and fins at frequent intervals. The engine blower housing and shrouds should be removed at least once each season or more often under dry, dusty conditions for a thorough cleaning of fins.

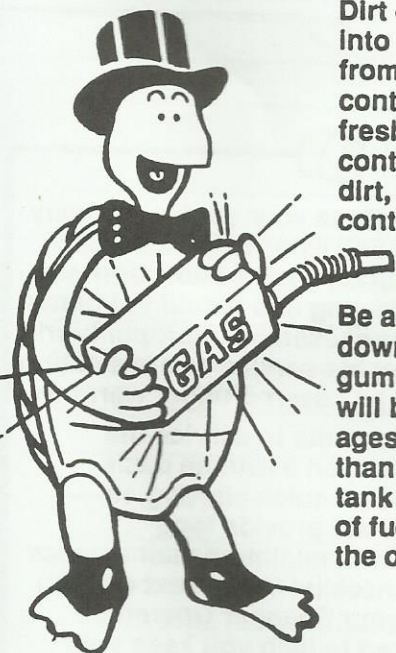
Failure to keep external surfaces clean not only presents fire hazards, but causes overheating and resulting engine damages such as:

1. distorted valve guides
2. sticking valves
3. scuffed, scored cylinder walls
4. overspeeding
5. loss of power
6. complete failure of engine.



Dirt can also be introduced into an engine in dirty fuel from a contaminated container. Always use clean fresh fuel from a clean container to guard against dirt, sludge and water contamination.

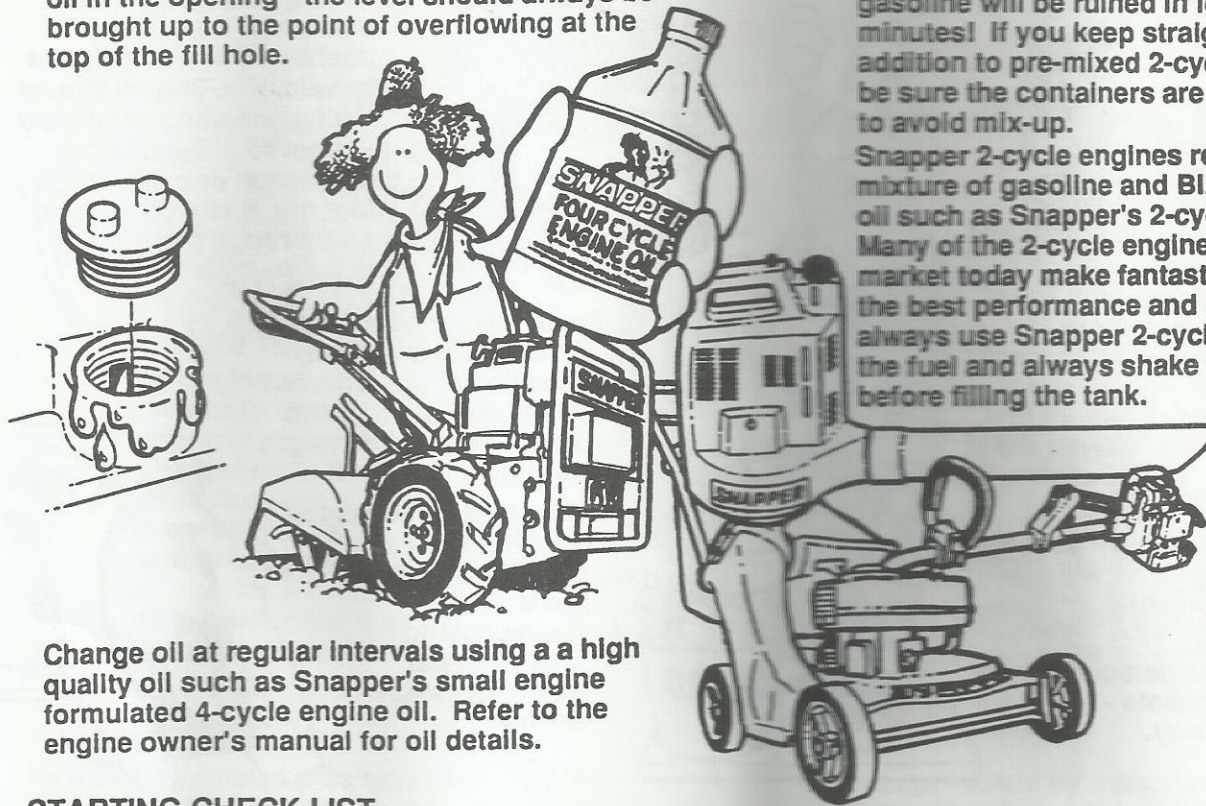
Be aware that fuel breaks down in storage and forms gummy compounds which will block carburetor passages. Never use fuel more than 3 months old. Drain tank then run the engine out of fuel before storing during the off-season.



An engine must also have proper lubrication. All engines use some oil. On 4-cycle engines, **CHECK OIL LEVEL BEFORE EACH START-UP.** Wipe area clean around the oil check plug or dipstick opening to keep dirt from falling into the engine when checking the oil. Always check with the machine on a level surface. On engines with dipstick, keep the level up to, but not over, the FULL mark. When adding oil, allow time for all of the oil to flow down the fill tube to prevent a false full reading when the level could actually be low and result in engine damage.

PRIMARY MAINTENANCE

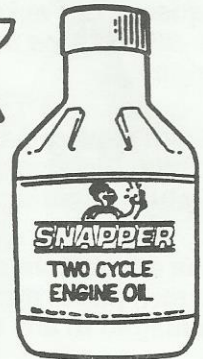
On 4-cycle engines with an oil level plug, don't be fooled into thinking the engine has sufficient lubricating oil if you can see "some" oil in the opening - the level should always be brought up to the point of overflowing at the top of the fill hole.



Change oil at regular intervals using a high quality oil such as Snapper's small engine formulated 4-cycle engine oil. Refer to the engine owner's manual for oil details.

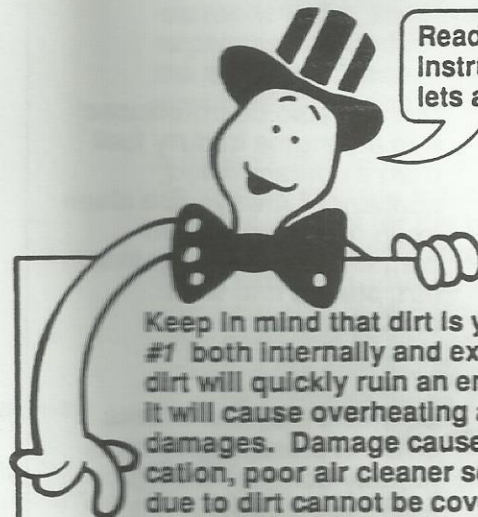
On 2-cycle engines, lubrication must be provided by an exact mixture of gasoline and 2-cycle air-cooled engine oil. A 2-cycle engine that is mistakenly run on straight gasoline will be ruined in less than 5 minutes! If you keep straight gasoline in addition to pre-mixed 2-cycle engine fuel, be sure the containers are clearly marked to avoid mix-up.

Snapper 2-cycle engines require a 32 to 1 mixture of gasoline and BIA certified TC-W oil such as Snapper's 2-cycle engine oil. Many of the 2-cycle engine oils on the market today make fantastic claims, but for the best performance and long engine life, always use Snapper 2-cycle oil. Pre-mix the fuel and always shake the container before filling the tank.



STARTING CHECK LIST

1. Engine Oil
 - To full level (4-cycle)
 - Properly mixed with gas (2 cycle)
2. Air Cleaner
 - Clean and properly serviced
 - Full fresh clean gasoline
3. Fuel Tank
 - Fuel valve open
 - Cap vent open
 - Inline filter clean
4. Choke
 - Operating properly
5. Primer (on some engines)
 - Used properly
6. Safety Interlock Switches
 - In proper position
 - All wires properly connected
7. Switch & Blade Control
 - Switch On
 - Blade control properly positioned on walk mower
8. Spark plug
 - Wire connected
 - Good connection
9. Throttle control
 - Start position
10. Blade
 - Properly installed and torqued
 - Sharpened
11. Muffler
 - Good condition
 - Not clogged
 - Grass & leaves cleaned away



Read and follow all safety instructions in safety booklets and manuals.

Keep in mind that dirt is your engine's *enemy* #1 both internally and externally! Internally, dirt will quickly ruin an engine and externally it will cause overheating and resulting internal damages. Damage caused by improper lubrication, poor air cleaner service or overheating due to dirt cannot be covered under warranty.

It only takes a few moments to service the engine (and equipment) on a routine basis but the rewards will be a quick starting, responsive engine that will provide long satisfactory service with minimum maintenance cost. The prestart checklist in the next column and instructions in your Snapper Operator's Manual are designated to help you keep your Snapper in top operating condition with minimum effort!

Safety Instructions & Operator's Manual for

SNAPPER®

**21" STEEL DECK
WALK MOWERS
ELECTRIC START
SERIES 15**



WARNING:

The engine exhaust from this product contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

SNAPPER

©McDonough, GA., 30253 U.S.A.

COPYRIGHT © 1998
SNAPPER INC.
ALL RIGHTS RESERVED

MANUAL No. 4-6916 (I.R. 5/98)